



Newsletter

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DECEMBER 1984 EDITION

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TI-99/4A USERS GROUP EXECUTIVE
1984/85

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EDITORIAL:

Well I'm still here so I guess I'm doing good work or maybe nobody really likes this job. A lot of things have been happening with the TI and I should wonder what TI's demise is a plus. Currently we are conversing with other user groups around Canada via UMBBS and have found that there are eight to ten thousand TI home computer's in Nova Scotia. By the way, UMBBS can be contacted through DATAPAC, TYMNET, or TELENET. Its address is 93200233, entrance number for TYMNET or TELENET is 3101, and to get into it is TLOGON UMBBS. Well finally the public domain software that TI released is here, included are the following: Super Bugger - a debugger originally written by Navarone Ind. but it was licensed to TI before their demise so TI gave the go ahead to release it; Disassembler - originally a in house disassembler which would never have hit the market unless of their demise in the home computer field; Disk Fixer - a in house disk fixer which blows away other disk doctoring software; John Clulow's BBS and Utilities - a collection of utilities written in assembler as well as his personalized BBS; and John Volk's Forth Freebies - a collection of TI Forth utilities, games, and words.

We now have another information source to breathe some life into this newsletter. In a rather quick response time, I have had my subscription to Miller Graphics - The Smart Programmer validated and received the last six issues as well as book written by TI on Software Development. The book is written professionally as a child can actually understand it. It covers Microprocessor Pascal, Power Basic and 9900 Assembly Language. It's a real plus if you are into developing software--more in next issue. That about wraps it up, if you have anything to contribute to the newsletter please give a call or drop it off in the mail to:

Paul Degner
1105 Church Avenue
Winnipeg, Manitoba
Canada R2X-1G1.

RAMBLINGS:

Well since UMBBS's arrival a flood of information has come on to my terminal screen. Tim MacEachern, the author of Wycove Forth, has left me a few letters regarding what's he up to. Lately he has developed utility words to call all the disk DSR subroutines. From this knowledge these utilities have been incorporated into several copier programs. He has one out for distribution, designed for multiple-drive systems as well he is helping other Forth programmers in the development of copy programs. His knowledge of Forth helps everyone involved. Lately he has been in contact with a few programmers in the Ottawa area

to help them create a single disk drive copying program. He says they have got to copying a disk in two passes but that it is more likely to be feasible on a 128K expansion card.

Also to add to Forth programming he is currently finishing a terminal emulator which uses the 64 column bit mapped display for output. Last time we talked he was working on control of the parallel port to be able to output incoming data directly to the printer. As well as this terminal program he has created decompilers, RELOAD, alternate screen files, etc. Well this gives you a good idea of how dedicated he is to the TI so you hopefully will probably see more Wycove Forth Utilities out on the market and I'm hopeful you will support his company.

A new company has just broken into the ever-expanding TI marketplace with the production of a 64K and 256K RAM DISK for the TI PEB. This card acts just like a disk drive, holding up to 127 files of any/all types. It will load files into memory 10-15 times faster than a disk drive. There will be an optional BATTERY BACKUP unit available. It will come with a complete disk manager on disk, that can be copied to the RAM DISK for fast access. It is reported to have a DIRECTORY utility built in the card, that will allow you to catalogue any disk or the RAM DISK, without losing your program in memory! Company name, release date, and price will be announced when known.

(Brought to you by: TINS)

Navarone Industries has released six modules for the home computer. First there is Speed Reading which is supposed to improve reading speed and comprehension. There are two versions available: one for teens and adults while the other one is for children but both retail at \$49.95 US. Next is Homework Helper which is geared to the elementary and junior high students. It contains a word processor and a 20,000 word spelling checker. A disk drive is necessary and it costs \$49.95 US. They also have Disk Fixer at \$39.95 US, Console Writer which acts as a word processor without the need of a disk drive that retails for \$49.95 US, Data Base Management which is a regular data base with the need of a disk drive at \$69.95 US, and finally Super-Duper which can duplicate your disks, single or double sided, then lock away your originals at \$39.95. Navarone indicates if you buy two or more modules before December 31, 1984 they will send you their Cartridge Expander at no cost. Please contact:

Navarone Industries, Inc.
510 Lawrence Expressway, #800
Sunnyvale, CA 94086

Telephone: (408)985-2932

To make ammends to last month's Technicians Corner, we must confess that the credit due was wrongly distributed for the Cursor program, the real author is Terry Atkinson of Dartmouth, NS.

This one isn't a rumour but known fact. The next issue of the newsletter will not be published because I'll be under the knife at St. B. a few days before Christmas so this makes a dent in the time needed to put it together. February's issue will make up for it.

If you have been wondering what has happened to International 99/4 Users-Group well, bad vibes have hit their financial support. Advertisers withdrawing from Ethusiast'99, a reduced renewal rate from their membership base, and rising overhead costs have almost put them in the poor house. But they have not lost the battle yet as they have cut their staff and overhead expenses to near zilch and made a deal with their creditors to keep them operating for at least the next couple of months. Also they have been involve in a couple of lawsuits against user groups who have pirated their software. So what happens next is anybody's guess?

In case you didn't know it, Texas Instruments does have other languages for the 99/4A than BASIC, Extended Basic, Assembler, and Forth. Paul Strelief has submitted a press release describing their UCSD P-SYSTEM PERIPHERAL and disk based Pascal software. Here it is.

The P-Code Peripheral is housed in a standard TI PEB card. UCSD Pascal, Vers 4.0 is a highly structured, easy-to-learn and flexible language that offers more efficient use of memory space, and greater program execution speed than interpreted BASIC programs. This system features:

- 1) A Pascal compiler package to compile Pascal programs in

"P-CODE". The "P-CODE" is a low-level code that is then interpreted by the machine language of the computer.

2) An Editor, Filer, and Utility package to provide full-screen editing capabilities, to manage disk files, and to supply other programming utilities.

3) An Assembler and Linker package which will allow programming in TMS 9900 Assembly Language.

Version 4.0 was developed by Softech Microsystems and the programs are block-structured so that logical elements of a program are developed one entire unit at a time. This version offers new features and characteristics in the area of memory management and scheduling services as well as important new options for the applications program developer.

One of the most important benefits of programs written for the UCSD P-SYSTEM is its portability. These programs can be run on other computers, often with no modification, through the use of a "P-CODE" compiler. Likewise, UCSD Pascal programs developed for other computers can be run on the TI-99/4A with little, if any modifications.

The UCSD P-CODE SYSTEM also offers the ability to run other languages at such time as these become available. The advantage is that the compiled programs will execute faster and occupy less memory space than those generated by the resident interpreted TI BASIC.

To run the UCSD P-SYSTEM and Pascal on the TI-99/4A requires the memory expansion unit, TI PEB, disk controller, at least one disk drive, and the software itself.

That wraps it up for December. Hope to see you at January's meeting and remember play it safe on the Holidays, don't drink and drive so you can save your wisdom for the next generation.

TECHNICIANS CORNER:

(Excerpt from the Miller Graphics February Issue - The Smart Programmer)

A gentleman from Georgia recently asked us how to get a Basic program that is stored on disk and is too large to run with the disk drives attached to run. He was referencing the CALL LOAD in the first issue of the Smart Programmer that shuts off the disk drives. At the time that I talked with him I said I didn't know but after I thought about it a little while some tips that Paul Schippnick gave us came to mind.

The problem was such that the program could be loaded into memory from the disk but it contains a large number of numeric and string variables which eat up a lot of memory when the program is RUNNING. In Basic the computer does not recognize Expansion Memory as a place to load programs so they must load and run from VDP RAM. Unfortunately the disk buffer space is also in VDP RAM and uses some of the space that may be necessary to run large Basic programs. Even with the CALL FILES(1) command there is still approx 500 bytes retained as a disk buffer and this may be just enough to crash the program. The CALL LOAD, which is listed below, will shut off the disk drives but in Basic you must type in NEW to open up the memory space. Naturally whenever you type in NEW your program is cleared out of memory and that was the problem.

The solution requires the Mini-Memory module to be plugged in the cartridge port and Expansion Memory to be attached and turned on. With the Mini-Mem in the port there are a few newcommands added to the Basic language, even though you have selected TI BASIC. The ones that we are concerned with are SAVE and OLD, MINIMEM, EXPMEM1 and EXPMEM2 and out of these we really only need SAVE and OLD EXPMEM2. The procedure for running these large Basic programs from disk is as follows:

1. Power up, select Basic and type in CALL INIT. This will initialize memory expansion and it will also clear out whatever was stored in the Mini-Mem module. If you want to retain what is in the Mini-Mem just turn off the memory expansion and then turn it back on and that will clear it out without erasing the Mini-Mem.

2. Load the program you want to run from your disk. OLD
DSK1.***** .

3. Type in SAVE EXPMEM2 and press ENTER. This will copy the program in VDP RAM into the exp-memory.

4. Type in `CALL LOAD(-31888,63,255)` and press ENTER. This tells the computer not to reserve any room in VDP RAM for the disk buffers.

5. Now type in `NEW` and press ENTER. You have just opened up the extra memory space in VDP RAM that the disk was reserving. But since Basic does not recognize expansion memory your program is still intact in high exp-memory, addresses hex A000 through FFFF.

6. Just type in `OLD EXPMEM2` and press ENTER and this will copy the program in the exp-memory back into the expanded VDP RAM program area. A copy of the program is still in the exp-memory and it will remain there until you turn off the exp-memory, save another program into that space or type in `CALL INIT`. No, you can't MERGE Basic programs.

7. Type in `RUN` and press ENTER and the program should now run without giving you a MEMORY FULL ERROR.

We didn't use `SAVE MINIMEM1` or `SAVE EXPMEM1` because neither one of these spaces are large enough to store a large Basic program, 12K+. The `MINIMEM` space is 4K of RAM, the `EXPMEM1` space is 8K of RAM, and the `EXPMEM2` space is 24K of RAM. Also the `EXPMEM1` space will allow you to save a program out there but it doesn't like `OLD EXPMEM1` so you can't bring it back. You can use any one of these three names in an `OPEN` statement for files provided you are not LINKing to an Assembly language subroutine in which case it is best to just use `EXPMEM2` in your `OPEN` statements for files.

ARTICLE:

Topic: Programmers strive to stay afloat in sea of piracy.

Written by: Laura Burns, Editor of MICROpendium

Pirates in terms of computers are hardly swashbuckling, but they are a threat, like the buccaneers of yore?

Programmers for the TI gave their views.

Larry Norton of Norton Software says he thinks everyone has been hurt by software pirates, but notes, "it's hard to put a price on what the figures are."

Gregory Kean of Kean Computing Inc. remarks that disk drives are getting sold more rapidly. "Piracy has also expanded as (more) people obtain disk drives," he says.

"It's hard to put a finger on it--mine are all accounting programs," says John Knupp of Pike Creek Computers. "Part of accounting programs is support. When things go wrong you have to call back and find out what to do. Also, accounting is not fun--that keeps all the hobbyists away from it."

Dr. Allan Swett of Intelpro says that piracy is "the single most economically devastating thing that's happening to TI programmers. In today's mail I received a letter from an unknowing purchaser of a pirated copy of my program asking for documentation."

Jim Peterson of Tigerclub Software, who deals only in BASIC and Extended BASIC programs, is philosophical about piracy.

"I don't think it has hurt me a great deal. I have a catalog with about 130 programs rather than just a few," he says. Thus, he notes, if someone copies a program of his, he might sell them something else.

"We're sure we've been hurt by piracy, but the market's so large it hasn't been that much," says Gene Harter of Not-Polyoptics.

Software pirates, he says, are not conspirators.

"The person in North Dakota is not connected to the person in Connecticut," he says. "There is not a network of piracy."

Most persons allow a friend or two to copy a program, he says, but not 50 friends.

"I think we can cut down piracy if we keep down the prices," he says, "There's less of a need to pirate if the price is down."

Ken Dibble of Challenger Software says, "I believe everyone's hurt by piracy. It hurts the user, it hurts the programmer, it hurts the business. If I think for every one piece of software I produce there's going to be ten out there, I'll be reluctant to develop new stuff."

James Harvey of The Independent Mail Order Software Sales Associates says he hasn't been hurt by piracy that he knows of.

Piracy cannot be eliminated, he says, but "we can do some things in software if we want to slow that down considerably."

He notes that he has considered writing a program that would open a file and read it before displaying a menu, so that just copying the program and giving it to somebody would not provide the program file.

"That would hurt your customers in that they couldn't make copies for their own use," he says. "I've not gone to that extreme but I see the possibility."

Harvey says he believes software buyers should be able to make backup copies. Norton says, "Our programs are protected so people pretty well can't do backups."

He adds that Norton Software will replace a diskette or cassette if a customer has problems.

"The thing with backups is that people usually make a couple dozen for their friends," he says.

"Usually the manufacturer will replace a program if anything goes wrong with it, so backups are not necessary," says Kean. Knupp notes that making backup copies for one's own use, not for resale, is well within the law.

"With my programs you can't do that, unfortunately," he says. He adds that he believes the copyright laws should have "more teeth" as far as other copies go, but "I don't know how you'd enforce it."

He says, "Unless you're on my computer, there's no way I could send you any updates. Sooner or later, if I had a correction, you'd be really up a creek."

He adds that most persons who want to do a large mailing list or accounting program "come up on the honest side. I can vouch for that--I do a lot of C.O.D.s."

"I see no reason why program authors should be distressed by legitimate backups," Swett says. "We'll supply as many backups as our customer require at only a little more than the cost of the diskette--so counting postage, we're supplying backups essentially at cost."

Harter notes that he wishes there were a way to publish how to break protection codes "for honest people" who, he says, make up the majority of TI users. Dibble says that everyone is entitled to a backup, because everyone who uses a computer has had a program crash.

"I know of one users' group that will go nameless that had copies of some people's programs before they hit the market," he says. "Users' groups are a wonderful thing but some get carried away."

It is difficult to stop such activity, he says.

"Is it worthwhile going to court for a few dollars?" he asks. Kean says that some people who have admitted to copying his programs "have claimed it's in the interest of my company to let other people see the quality of the programs."

Swett says he has the names of several individuals who have pirated software. He says his company has contacted the postmaster of one city and "sent a letter requesting that individual desist from piracy activity."

"A copyright is only as good as the money you have to defend it and there's simply not enough money in software to make enough money to hire a lawyer," Peterson says.

Norton says his company is currently looking into legal action against "a couple of dealers who have pirated programs and sell them at flea markets."

He notes that software piracy is currently "more an ethical problem than a legal problem," not yet well defined by law.

He says that both the United States and Canada "need to make a stand" in this regard. However, he notes, this will not entirely solve the problem. Both countries have laws clearly forbidding the unlawful copying and selling of copyrighted videotapes, he points out, yet "everyone I know copies videotapes."

Problems exist, he says, when a person buys a database manager and makes 33 copies for his company. Otherwise, he says, "nobody's going to get caught copying software."

Most pirated copies are given away, the programmers agree.

However, Swett says he feels that there is "no such thing as a gift between businessmen." He says people are "letting themselves off the hook by saying it's a gift when there's no such thing."

Norton says that he decided against going into the Commodore 64 market because the piracy in that market is "ten times worse" than in the TI market.

He notes that only seven percent of TI users have the full system necessary to copy his Killer Caterpillar program and that he can look at that as "advertising" if they know how to break the protection scheme. The other 93 percent will have to buy the program.

Not all programs can be protected, he notes.

"BASIC programs are a complete writeoff," he says.

A problem with TI, he says, is that "the public got the impression that since TI stopped making the computer they have the right to get programs by any means they wish."

In the end, this means that there will be less software available, he believes.

Norton says that it is hard to say how much piracy takes place. He has heard, he says, figures ranging from one pirated copy for every legitimate copy to nine pirated copies to every legitimate copy. He says that nine out of every ten buyers will not copy a program or break the code, but that the tenth person may make twenty copies.

Schools, Norton says, usually have complete computer systems and this can create a problem because there is usually a "whiz kid" who copies software for his friends.

"It's like the videotape industry, or taping records for your friends," he notes. "When you start trying to sell pirated copies, people get mad."

In such a case, he says, the pirate faces a much greater chance of legal action.

"If somebody's selling pirate software, it eventually gets back to the company," he says.

Norton says that his Extended BASIC software used the XBASIC proprietary protection format, but notes that in the past few months his company has added additional protective schemes.

"Software piracy's going to go on," he feels. "People like to get something for free."

He said that if users' groups would teach people the implications of what is going on, fewer individuals would pirate software.

"I can't tell you everything we've done," is Harter's comment in regard to protection against pirates.

Dibble says his company has no plans to add further protection in that "protecting things where the user can't back up his copy is a way to alienate the user."

Kean notes that there is no final solution in that "every protection has its counter unprotection."

Swett says that he has plans for a foolproof identification system which "can identify the original we sell so it can trace piracy that comes to our attention. We would be glad to share information regarding these techniques with any other software producers."

Harter says, "I know a lot of programmers who haven't even started programming because of fear of pirates. I think a lot of people have the idea they'll never make a profit because of pirates, but even pirates have to buy the programs to begin with." He adds, "I don't think fear of piracy is justified as a reason for not selling stuff."

Knupp says he knows of no one who has left the market because of piracy. He comments, "If you make a mistake in a game, who cares? They think it's part of the game."

In accounting, he points out, a mistake of a penny or a dollar is significant.

"If someone were to call me and were'nt on my list I could find out very quickly," he says. "Accounting is a dynamic thing" which become perfected through use, he adds.

"We allow updates at a lower cost than going out and buying a new program," he says.

Swett says he does not personally know of anyone who has left the market because of pirates, but he has read of about a dozen who have.

"In my own case there are programs I never brought to market because of the apparent lack of support from the TI community," he says. "I'd like to make a challenge to people producing so-called backup or disk unlocking tools to guarantee that they would compensate software developers for financial losses incurred because of their programs."

Peterson says he corresponded with at least programmers who have programs "on the shelf". He notes that it is not necessarily for the reason of piracy the programs haven't been marketed but "that could be a factor. It's because of the lack of market and the lack of market is because of piracy. In general, if everybody knows how to break protection and get programs for free, there's not much left to sell."

Dibble says he knows programmers who have given "serious considerations" to leaving the TI market. However, he adds, "Most people don't program for money. They program because they like to program."

W99/4UG PROGRAM LIBRARY REGULATIONS

1) The W99/4UG Program Library shall consist of owner written and/or translated programs. Programs copied from any magazine will not be accepted.

2) The W99/4UG Program Library will not be responsible for any bugs in any program submitted, nor shall the W99/4UG Program Library make changes to any program. Corrections will be the responsibility of the owner and it will be the responsibility of that person to send a corrected version of that program.

3) The W99/4UG Program Library shall charge :

\$2.00 for the program (goes to author)

\$1.00 for cassette or provide replacement cassette

\$4.00 for diskette or provide replacement diskette

4) Instead of paying for a program a member may use the software exchange program. Any member that submits a program to the W99/4UG Program Library will receive three programs in exchange.

5) The W99/4UG Program Library is open to any member of the Winnipeg 99/4 Computer Club.

6) Any member found pirating another member's program will be asked to leave the group.

7) The Winnipeg 99/4 Computer Club is not responsible for the content of any program in its library.

PUBLIC DOMAIN LIBRARY:

This segment of the library consists of programs which have been published in a magazine, such as 99'er, and belong in the public domain. In addition, certain individuals have decided to submit their programs to the Public Domain library instead of the main club library where there is a royalty fee.

The Public Domain library now has almost every game published in 99'er as well as some programs from COMPUTE and other magazines. For those of you whose interests lie in applications rather than games, we have a small selection of those. Now is the time to contribute to the Public Domain library.

Remember, you may receive a copy of any program in the Public Domain library at no charge. All we ask is that you contribute a program if you have one that the Public Domain library does not have.

FILE: ORIG PROG
DATE: 12/1/84
TITLE: ORIGINAL CLUB PROG.

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0 = PAGE #
1 = PROGRAM
2 = AUTHOR
3 = LANGUAGE
4 = RESTRICT
5 = PERIPHERL
6 = TYPE

NOTE: NOT PUBLIC DOMAIN

0	1	2	3	4	5
1	APOLLO LANDER	M. SWIRIDENKO	XBASIC	NONE	NONE
2	BATTLESHIP	J. BAINARD	XBASIC	NONE	MODEM
3	BLACKJACK	J. BAINARD	XBASIC	NONE	JOYSTICK
4	CHECKERS	M. SWIRIDENKO	BASIC	NONE	JOYSTICK
5	DEATHSHIP	D. HOWE	BASIC	NONE	NONE
6	GRAND PRIX	M. SWIRIDENKO	XBASIC	NONE	NONE
7	HANGMAN	J. BAINARD	BASIC	NONE	NONE
8	LOANS MORTGAGE	R. HUBKA	XBASIC	NONE	NONE
9	MASTER OTHELLO	F. WERDERMAN	XBASIC	NOT DISK	NONE
10	MONCAL	M. SWIRIDENKO	BASIC	NONE	NONE
11	NIGHT RANGER	J. BAINARD	XBASIC	NONE	JOYSTICK
12	NUCLEUR REACTOR	F. WERDERMAN	XBASIC	NONE	NONE
13	PAC-MAN	L. CROSS	XBASIC	NONE	NONE
14	PHONE DIRECTORY	M. SWIRIDENKO	XBASIC	DISK ONLY	DISK DRIVE
15	PHONE NUMBERS	C. CARLSON	BASIC	NONE	NONE
16	QUEST	J. BAINARD	XBASIC	NONE	JOYSTICK
17	SAY & PRINT	D. JASPER	BASIC	NOT DISK	TEII
18	SCREEN MANAGER	R. JACKSON	XBASIC	\$5.00+DISK	DISK
19	SOUND EFFECTS	D. JASPER	XBASIC	NONE	NONE
20	SPELLING 100	D. JASPER	XBASIC	NONE	XBASIC
21	STCKMARKT.GRAPH	R. BOISVERT	BASIC	NONE	NONE
22	STONE MANOR	F. WERDERMAN	XBASIC	NONE	NONE
23	SUPERSPELL	D. LELAND	BASIC	NONE	TEII, SPEECH
24	TOWER OF HANOI	J. BAINARD	BASIC	NONE	NONE
25	WHIST	J. BAINARD	BASIC	NONE	NONE

W99/4UG BOOK LIBRARY:

The following books are available for use by Club Members only and are normally only available at each monthly meeting by requesting them from Book Librarian, Doug Howe. Because we have had problems with some members not returning a book to the Librarian by the following meeting there will be a future penalty for late returns. Here again is the list of books available for a one month period:

1) Programmer's Reference Guide to the TI-99/4A

by C. Regena

2) Terrific Games for the TI-99/4A

by Hal Rendo & Sam Edwards

3) Time Lost - A Computer Adventure

by Que Corporation

4) Programs for the TI Home Computer

by Steve Davis

5) TI-99/4A Game Programs

by Frederick Holtz

6) Smart Programming Guide for Sprites

by Craig Miller

7) The Source User's Manual (1983)

by The Source Telecommunications Network

8) Compute's First Book of TI Games

9) TI-99/4A Console Technical Data

10) Best of 99er

by Home Computer Magazine

OFF THE WALL:

This issue we are implementing a new column dedicated to off the wall news from the many newsletters we receive. We are always interested in receiving other newsletters so we can keep you the user informed.

Protection: (Taken from Nov. issue of TINS)

This article will deal with 3 types of protection and how they may be removed.

The disk manager has a protect option available that is only designed to prevent accidental erasure or alteration of a program. The removal of this protection is accomplished by the disk manager in the modify protection clause.

The protect option in extended basic is a little more difficult to handle. It is imposed by the following commands:

```
SAVE DSK1.XXX,PROTECTED
```

or

```
SAVE CS1, PROTECTED
```

With this protection invoked, you can load the program into RAM and run it, but you cannot list, edit or save it.

To remove the protect clause, in this case, the 32K Extended Memory Card is needed. There are four memory locations that can be changed to effectively remove the protect clause. (Ed. Note: We disapprove of making public these CALL LOADs due to the fact it endangers future marketing of programs.)

The final type of protection is what is referred to as Proprietary protection. It is used to stop you from copying the disk with disk copying programs such as the copy option of disk manager. To invoke this protection you must do so while initializing the disk with the disk manager.

When you go into disk manager, press FCTN X ten times. The symbols "><" will appear at the top of the screen indicating

that proprietary protection clause is active. (Ed. Note: We disapprove of making public the way you unprotect a disk because again it endangers future marketing of programs.)

CANADIAN TIBBS (tm) (Courtesy: TINS)

City	Code	Number
Mississauga Ont.	416	826-6011
Dartmouth NS	902	434-3121

AMERICAN TIBBS (tm)

Tom's River NJ	201	929-8161
Portland ME	207	797-5690
Philadelphia PA	215	927-6432
Reading PA	215	929-5348
Washington DC	301	434-0117
Newark Del.	302	322-3999
Denver CO	303	T.B.A.
West Palm FL	305	793-8050
Taylor MI	313	292-6147
Detroit MI	313	544-7788
Clawson MI	313	751-1119
Wichita Kan.	316	681-3167
Atlanta #1 "THE ORIGINAL TIBBS"		
Georgia	404	425-5254
Atlanta #2 GA	404	928-4278
Atlanta #3 GA	404	471-1283
Ringgold GA	404	935-4054
Appleton WI	414	739-5380
Freedom WI	414	788-9730
Milwaukee WI	414	649-TEAM
San Francisco CA	415	355-3092
Redwood City CA	415	364-8517
Oakland CA	415	658-3159
Gresham OR	503	661-0408
Knoxville OH	515	842-2104
Albany NY	518	765-4993
San Diego CA	619	276-3173
Fontana CA	714	350-8583
Tonawanda NY	716	837-6635
Va. Beach VA	804	486-1484

Latest word from UMBBS that there will be a TEXAS INSTRUMENTS board up soon. H. Laube, U of M Computer Services, confirmed that my application has been received and they are implementing my idea very soon.

The program listing ^{Below} ~~on the next page~~ is the source code (courtesy T.L. Atkinson) to produce true lower case characters on the home computer. Assemble this source code and then go to extended basic and then load it in via

```
> CALL INIT          <CR>
> CALL LOAD("DSK1.OBJECT") <CR>
```

Once it has loaded, load in your extended basic program, input on a line before any executable code

```
O CALL LINK("BEGIN")      <CR>
```

Now run your program and it will now produce true lower case.

That's all for this month, if you have anything for the newsletter please phone and for sure it will be in the next issue.

```
DEF BEGIN
AL DATA >0000,>0038,>4848,>4834
DATA >0060,>2038,>2424,>2478
DATA >0000,>0038,>4440,>4438
DATA >000C,>0838,>4848,>483C
DATA >0000,>0038,>447C,>4038
DATA >0018,>2420,>7020,>2020
DATA >0000,>0018,>241C,>0438
DATA >0060,>2028,>3424,>2424
DATA >0010,>0070,>1010,>107C
DATA >0008,>0018,>0808,>4830
DATA >0020,>2024,>2830,>2824
DATA >0030,>1010,>1010,>107C
DATA >0000,>00A8,>5454,>5454
DATA >0000,>0058,>2424,>2424
DATA >0000,>0038,>4444,>4438
DATA >0000,>0078,>2438,>2070
DATA >0000,>0030,>4838,>080C
DATA >0000,>0058,>2420,>2020
DATA >0000,>003C,>4038,>0478
DATA >0020,>2078,>2020,>2418
DATA >0000,>0048,>4848,>4834
DATA >0000,>0044,>4428,>2810
DATA >0000,>006A,>2A2A,>2A14
DATA >0000,>0044,>2810,>2844
DATA >0000,>0044,>2810,>1010
DATA >0000,>007C,>4810,>247C
BEGIN LI R0,>0608
LI R1,AL
LI R2,208
BLWP >2024
RT
END
```

FILE: SWAP/SELL
DATE: 12/1/84
TITLE: SWAP AND/OR SELL

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*Merry
Christmas!*